

ADDENDUM TO GRAYS HARBOR ANALYSIS - 15 February 2001

On February 1, 2001 Olympic Coast National Marine Sanctuary (Sanctuary) presented the Sanctuary's Area to Be Avoided (ATBA) proposal to the Port of Gray's Harbor. During the presentation it was noted that the Sanctuary had not captured all of the vessels transiting between Grays Harbor and the Strait of Juan de Fuca. The Sanctuary committed to taking another look at the issue. Upon further examination it was discovered that the original data did not include vessels transiting between Grays Harbor and Canadian Ports. This report is an addendum to the Sanctuary's ATBA Analysis provided to the U. S. Coast Guard on August 14, 2000.

In conducting this additional analysis the Sanctuary used three data sources, two databases from the Canadian Coast Guard Marine Communications and Transportation Services (MCTS) in Tofino, British Columbia, and a list of all vessels calling on Grays Harbor in 1999 provided by the Port. This analysis identified 107 vessels transiting from between Grays Harbor and the Strait of Juan de Fuca in 1999, of those vessels 48 were over 1,600 GT and 10 of those transited inside the current ATBA.

From the MCTS data the Sanctuary identified a total of 104 vessels that transited between Grays Harbor and the Strait of Juan de Fuca. Further examination of the information from the Port of Grays Harbor identified an additional 3 vessels. Of these, 48 (table 1) were above 1,600 GT and would be affected by the proposed change in ATBA applicability. The remaining 59 vessels (table 2) would not be affected by the proposal.

Of the 48 vessels, greater the 1,600 GT, 43 transits (90%) were identified and plotted using the Sanctuary's monitoring database (figure 1). Of these 10 transits were found to be with in the ATBA (figure 2) (table 3). Assuming the Traffic Separation Scheme recommendations are implemented, vessels currently transiting through the ATBA would have a 98 nm transit from the Grays Harbor Sea Buoy to the new southern entrance of the TSS. If these vessels were to stay outside the ATBA they would have a transit of 108 nm (figure 3). Using the average speed of these 10 vessels (14.5 knots) the Sanctuary estimates that approximately 10 vessels will incur an average increase in transit time of 41 minutes as a result of the proposed

change in ATBA applicability. This estimate does not include any weather or other operational contingencies that effect vessel routing. This is not considered to be an unreasonable burden given other adjustments typically required by the shipping industry related to variable weather conditions or other factors.

NAME	VESSEL TYPE	FROM	TO	DATE	FLAG	SPEED	GRT
TANAGRA	Bulk Carrier	Tacoma	Aberdeen	6/11/99	Vanuatu	13.5	13706
GRETKE OLDENDORFF	Bulk Carrier	New Westminster	Aberdeen	5/15/99	Liberia	15.0	13712
GLORY ISLAND	Bulk Carrier	Vancouver	Grays Harbor	1/6/99	Panama		14397
BLUE GEMINI	Bulk Carrier	Vancouver	Aberdeen	12/4/99	Panama	14.0	14431
BLUE NOVA	Bulk Carrier	Aberdeen	Tacoma	4/27/99	Panama	14.0	14431
BLUE NOVA	Bulk Carrier	Aberdeen	Tacoma	6/16/99	Panama	14.0	14431
BLUE NOVA	Bulk Carrier	Aberdeen	Tacoma	8/5/99	Panama	14.0	14431
BLUE NOVA	Bulk Carrier	Aberdeen	Tacoma	9/20/99	Panama	14.0	14431
KEN UN	Bulk Carrier	Port Angeles	Aberdeen	9/12/99	Panama		14743
KEN ZUI	Bulk Carrier	Aberdeen	Japan	2/16/99	Panama		14743
SEVEN OCEAN	Bulk Carrier	Tacoma	Aberdeen	10/9/99	Panama	14.5	15884
RUBIN STAR	Bulk Carrier	Aberdeen	Tacoma	2/25/99	Panama		15932
LAUREL ISLAND	Bulk Carrier	Aberdeen	Everett	1/30/99	Panama		15949
CENTURY STAR	Bulk Carrier	Aberdeen	Everett	4/4/99	Liberia	13.8	16725
OCEAN CAMELLIA	Bulk Carrier	Vancouver	Aberdeen	10/14/99	Panama		16761
BRIGHT PHOENIX ¹	Bulk Carrier	Vancouver	Grays Harbor	8/27/99	Philippines	14.2	17075
ARIES HARMONY	Bulk Carrier	Port Angeles	Aberdeen	5/26/99	Panama	14.3	17377
KEN SHIN ²	Bulk Carrier	Vancouver	Columbia River	6/18/99	Vanuatu	15	19420
GLOBAL ARROW	Bulk Carrier	Aberdeen	Port Angeles	11/10/99	Panama		20395
STAR EVVIVA	Bulk Carrier	Grays Harbor	Vancouver	4/22/99	Norway	15	24479
TOKI ARROW	Bulk Carrier	Grays Harbor	Vancouver	3/22/99	Bahamas	15	25931
GANNET ARROW	Bulk Carrier	Vancouver	Grays Harbor	5/23/99	Bahamas	15	27470
STAR DRIVANGER	Bulk Carrier	Grays Harbor	Vancouver	2/27/99	Singapore	15	27735
SAGA TIDE	Bulk Carrier	Grays Harbor	Vancouver	11/28/99	Norway		29235
APALIS ARROW	Bulk Carrier	Grays Harbor	Woodfibre	7/17/99	Bahamas	15	30767
STAR HARMONIA ²	Bulk Carrier	California	Duncan Bay	11/14/99	Norway	16	32749
KITE ARROW	Bulk Carrier	Grays Harbor	Harmac	2/26/99	Bahamas		36008
LAUT JAYA	Bulk Carrier	Aberdeen	Tacoma	9/1/99	Singapore	13.75	
ARCTIC STORM	Factory F/V	Aberdeen	Bellingham	6/3/99	United States	12.5	4068
STAR TRONDANGER	General Cargo	Duncan Bay	Grays Harbor	3/28/99	Norway	15	19203
STAR TRONDANGER	General Cargo	Grays Harbor	Vancouver	4/1/99	Norway	15	19203
STAR TOSCANA	General Cargo	Duncan Bay	Grays Harbor	1/22/99	Malta		23253
STAR TOSCANA	General Cargo	Grays Harbor	Duncan Bay	1/25/99	Malta		23253
SISKIN ARROW	General Cargo	Grays Harbor	Harmac	11/28/99	Bahamas		26130
STAR DERBY	General Cargo	Grays Harbor	Duncan Bay	7/26/99	Norway	15	27104

¹ The MCTS databases had misidentified this vessels as the RO-RO Bright Stream, information from the Port of Grays Harbor and the MCTS radar data confirmed that this was the Bulk Carrier Bright Phoenix.

² The MCTS database did not identify these vessels as calling on Grays Harbor, this was corrected using Port of Grays Harbor data.

STAR DERBY	General Cargo	Grays Harbor	Squamish	9/23/99	Norway	15	27104
STAR DERBY	General Cargo	Grays Harbor	Crofton	12/1/99	Norway	15	27104
STAR GRIP	General Cargo	Grays Harbor	Vancouver	12/29/99	Norway	15	27192
STAR DROTTANGER	General Cargo	Grays Harbor	Duncan Bay	12/14/99	Singapore	15	27735
STAR DIEPPE	General Cargo	Grays Harbor	Port Mellon	11/19/99	Norway	15	27911
WESTWOOD CLEO	General Cargo	Crofton	Grays Harbor	6/23/99	Bahamas	15	28805
STAR LEIKANGER	General Cargo	Grays Harbor	Duncan Bay	6/24/99	Singapore		29275
STAR HERDLA	General Cargo	Grays Harbor	Duncan Bay	8/17/99	Norway	16	32744
STAR HARMONIA	General Cargo	Grays Harbor	Vancouver	10/30/99	Norway	16	32749
STAR HARDANGER	General Cargo	Vancouver	Grays Harbor	11/3/99	Norway	16	34364
WEAVER ARROW	General Cargo	Grays Harbor	Woodfibre	5/28/99	Bahamas		36008
GALAXY ²	Passenger	California	Victoria	5/13/99	Liberia	21.5	76522
DINOK	Reefer	Grays Harbor	Port Angeles	5/23/99	South Korea	17	4392

Table 1: Vessels (48) transiting between Grays Harbor and the Strait of Juan de Fuca, greater then 1,600 GT

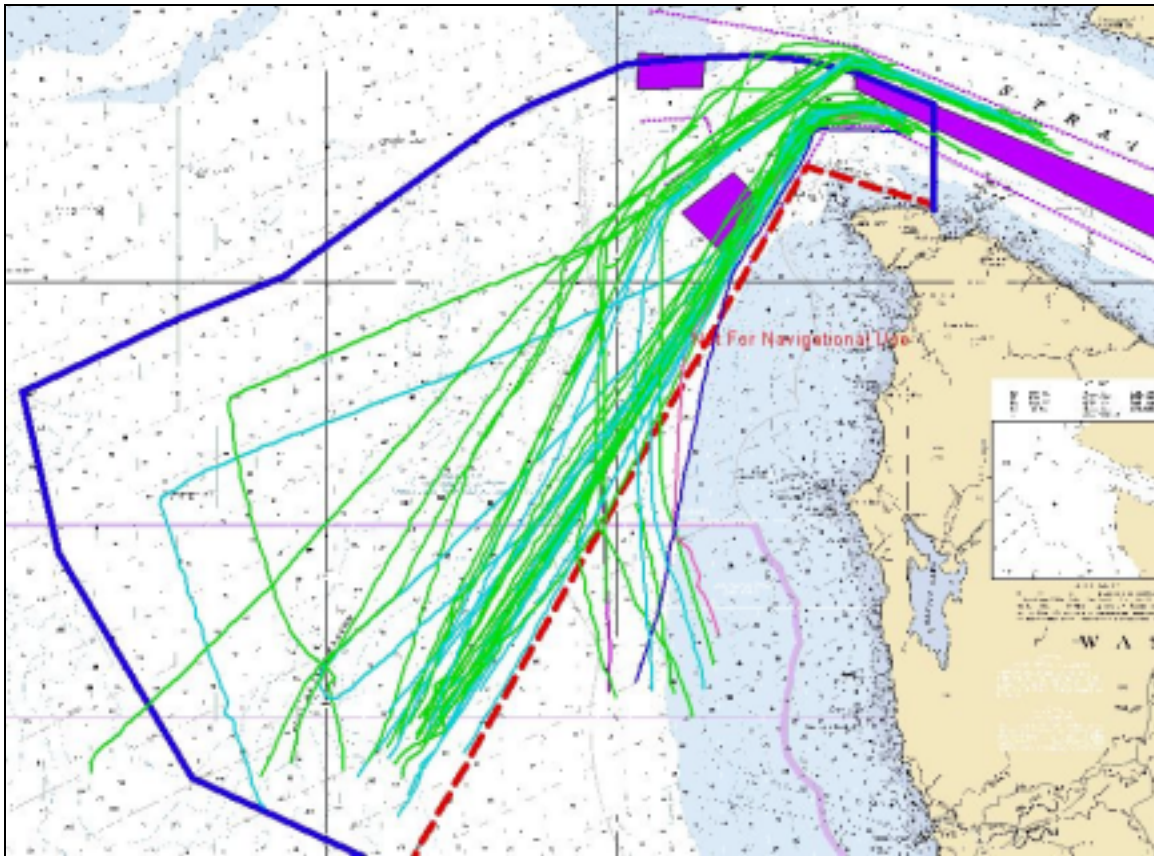


Figure 1: Vessels (43) transiting between Grays Harbor and the Strait of Juan de Fuca, greater then 1,600 GT

NAME	VESSEL TYPE	FROM	TO	DATE	FLAG	SPEED	GRT
DISCOVERY	Commercial F/V	Grays Harbor	Neah Bay	9/28/99	United States		38
DISCOVERY	Commercial F/V	Grays Harbor	Port Angeles	11/14/99	United States		38
SAVAGE	Commercial F/V	Juan de Fuca	Grays Harbor	12/1/99	United States		115
GOLDEN FLEECE	Commercial F/V	Bellingham	Grays Harbor	10/31/99	United States		270
COWSLIP	Government	Seattle	Grays Harbor	9/25/99	United States		1080
WE RICKER	Government	Juan de Fuca	Grays Harbor	7/9/99	Canada	11	1104
VICTORIA EXPRESS	Passenger	Grays Harbor	Port Angeles	4/26/99	United States		84
CATALINA JET	Passenger	Fraser River	Grays Harbor	5/20/99	United States		87
LADY WASHINGTON	Passenger	Grays Harbor	Seattle	6/2/99	United States		99
LADY WASHINGTON	Passenger	Port Townsend	Aberdeen	6/30/99	United States		99
CHARADE	Private Yacht	Bellingham	Grays Harbor	9/26/99	United Kingdom	14	
CURVE OF TIME	Private Yacht	Annacis Island	Grays Harbor	7/18/99	Canada		
CURVE OF TIME	Private Yacht	Vancouver	Grays Harbor	8/9/99	Canada		
MANFRED NYSTROM	Tug Chip Barge	Aberdeen	Bellingham	6/17/99	United States		99
ASTORIA	Tug Chip Barge	Bellingham	Aberdeen	4/19/99	United States		145
JOSEPH T	Tug Chip Barge	Port Angeles	Aberdeen	4/1/99	United States		148
MIKE OLEARY	Tug Chip Barge	Bellingham	Grays Harbor	4/10/99	United States		155
MIKE OLEARY	Tug Chip Barge	Bellingham	Grays Harbor	10/7/99	United States		155
MIKE OLEARY	Tug Chip Barge	Aberdeen	Bellingham	4/12/99	United States		155
MIKE OLEARY	Tug Chip Barge	Aberdeen	Bellingham	4/21/99	United States		155
MIKE OLEARY	Tug Chip Barge	Everett	Aberdeen	4/19/99	United States		155
MIKE OLEARY	Tug Chip Barge	Aberdeen	Bellingham	9/28/99	United States		155
HOWARD OLSEN	Tug Chip Barge	Bellingham	Aberdeen	3/18/99	United States		158
HOWARD OLSEN	Tug Chip Barge	Bellingham	Aberdeen	5/19/99	United States		158
GENE DUNLAP	Tug Chip Barge	Everett	Grays Harbor	4/1/99	United States		164
GENE DUNLAP	Tug Chip Barge	Aberdeen	Bellingham	4/3/99	United States		164
GENE DUNLAP	Tug Chip Barge	Bellingham	Aberdeen	4/4/99	United States		164
SUIATTLE	Tug Chip Barge	Aberdeen	Bellingham	4/29/99	United States		189
SUIATTLE	Tug Chip Barge	Bellingham	Aberdeen	4/27/99	United States		189
SUIATTLE	Tug Chip Barge	Bellingham	Aberdeen	4/30/99	United States		189
SUIATTLE	Tug Chip Barge	Aberdeen	Bellingham	5/2/99	United States		189
SUIATTLE	Tug Chip Barge	Aberdeen	Bellingham	5/7/99	United States		189
SUIATTLE	Tug Chip Barge	Aberdeen	Bellingham	5/28/99	United States		189
SUIATTLE	Tug Chip Barge	Bellingham	Aberdeen	5/26/99	United States		189
SUIATTLE	Tug Chip Barge	Everett	Aberdeen	5/5/99	United States		189
MALOLO	Tug Chip Barge	Aberdeen	Port Townsend	5/15/99	United States		199
MALOLO	Tug Chip Barge	Everett	Aberdeen	5/14/99	United States		199
TAURUS	Tug Chip Barge	Bellingham	Grays Harbor	3/6/99	United States		199
TAURUS	Tug Chip Barge	Bellingham	Grays Harbor	3/16/99	United States		199
TAURUS	Tug Chip Barge	Aberdeen	Bellingham	1/24/99	United States		199
TAURUS	Tug Chip Barge	Bellingham	Aberdeen	1/22/99	United States		199
TAURUS	Tug Chip Barge	Aberdeen	Bellingham	3/8/99	United States		199
TAURUS	Tug Chip Barge	Aberdeen	Bellingham	3/20/99	United States		199
MANFRED NYSTROM	Tug Light	Bellingham	Grays Harbor	6/15/99	United States		99

BENJAMIN FOSS	Tug Light	Seattle	Grays Harbor	1/22/99	United States		106
EDITH FOSS	Tug Light	Grays Harbor	Seattle	1/24/99	United States		106
MIKE OLEARY	Tug Light	Grays Harbor	Bellingham	10/9/99	United States		155
HOWARD OLSEN	Tug Light	Bellingham	Aberdeen	9/19/99	United States		158
GENE DUNLAP	Tug Light	Aberdeen	Bellingham	4/6/99	United States		164
TAURUS	Tug Light	Grays Harbor	Everett	12/24/99	United States		199
PRIMO BRUSCO	Tug Light	Port Angeles	Grays Harbor	11/23/99	United States		284
DAVID BRUSCO	Tug Log Barge	Aberdeen	Port Angeles	1/28/99	United States		190
REDWOOD CITY	Tug Misc Barge	Aberdeen	Everett	4/30/99	United States		64
JOSEPH SAUSE	Tug Misc Barge	Bellingham	Aberdeen	1/27/99	United States		149
JOSEPH SAUSE	Tug Misc Barge	Bellingham	Aberdeen	3/30/99	United States		149
JOSEPH SAUSE	Tug Misc Barge	Bellingham	Aberdeen	4/24/99	United States		149
REDWOOD CITY	Tug Misc. Barge	Everett	Grays Harbor	4/1/99	United States		64
PETER M	Tug Misc. Barge	Seattle	Grays Harbor	4/4/99	United States		96
LELA JOY	Tug Misc. Barge	Grays Harbor	Seattle	10/2/99	United States		189

Table 2: Vessels (59) transiting between Grays Harbor and the Strait of Juan de Fuca, less than 1,600 GT

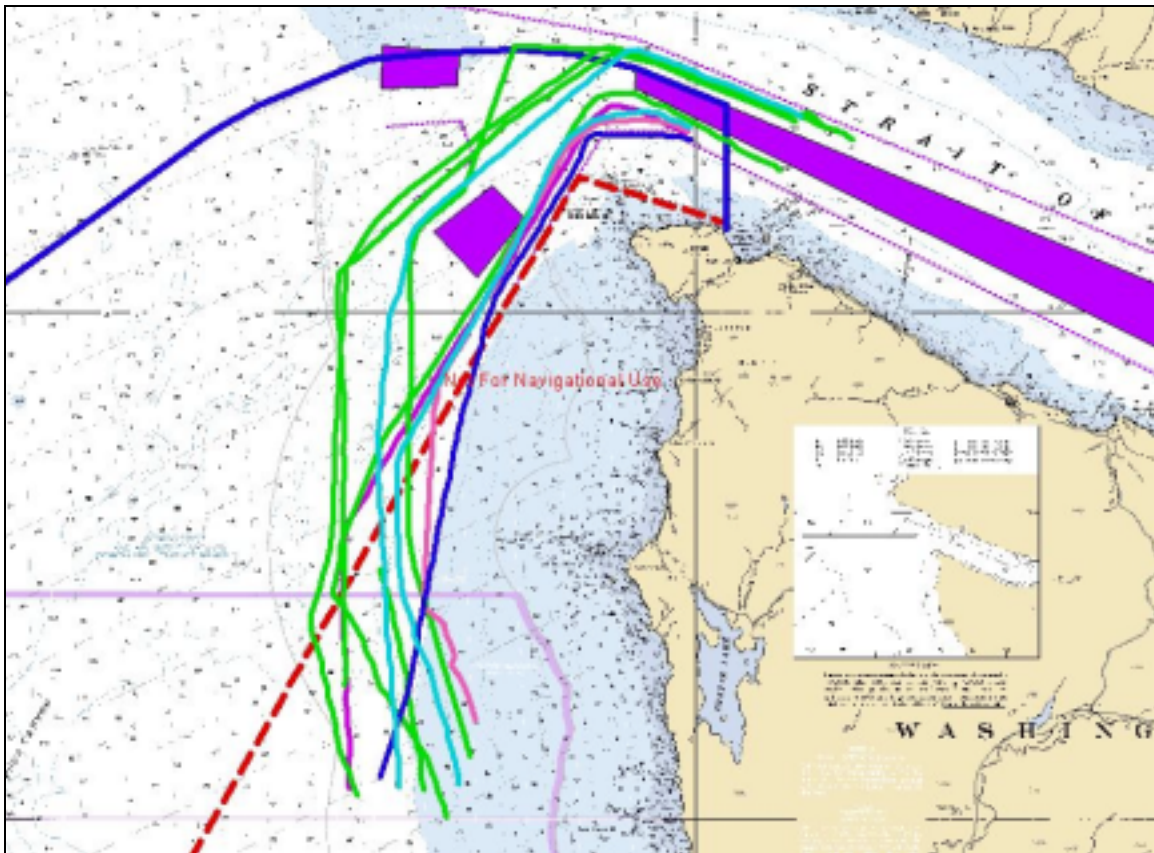


Figure 2: Vessels (10) transiting between Grays Harbor and the Strait of Juan de Fuca through ATBA, greater than 1,600 GT

NAME	VESSEL TYPE	FROM	TO	DATE	FLAG	SPEED	GRT
GRETKE OLDENDORFF	Bulk Carrier	New Westminster	Aberdeen	5/15/99	Liberia	15.0	13712
ARIES HARMONY	Bulk Carrier	Port Angeles	Aberdeen	5/26/99	Panama	14.3	17377
GANNET ARROW	Bulk Carrier	Vancouver	Grays Harbor	5/23/99	Bahamas	15	27470
APALIS ARROW	Bulk Carrier	Grays Harbor	Woodfibre	7/17/99	Bahamas	15	30767
LAUT JAYA	Bulk Carrier	Aberdeen	Tacoma	9/1/99	Singapore	13.8	
ARCTIC STORM	Factory F/V	Aberdeen	Bellingham	6/3/99	United States	12.5	4068
STAR TOSCANA	General Cargo	Grays Harbor	Duncan Bay	1/25/99	Malta		23253
WESTWOOD CLEO	General Cargo	Crofton	Grays Harbor	6/23/99	Bahamas	15	28805
DINOK	Reefer	Grays Harbor	Port Angeles	5/23/99	South Korea	17	4392

Table 3: Vessels transiting (9) between Grays Harbor and the Strait of Juan de Fuca through ATBA, greater than 1,600 GT

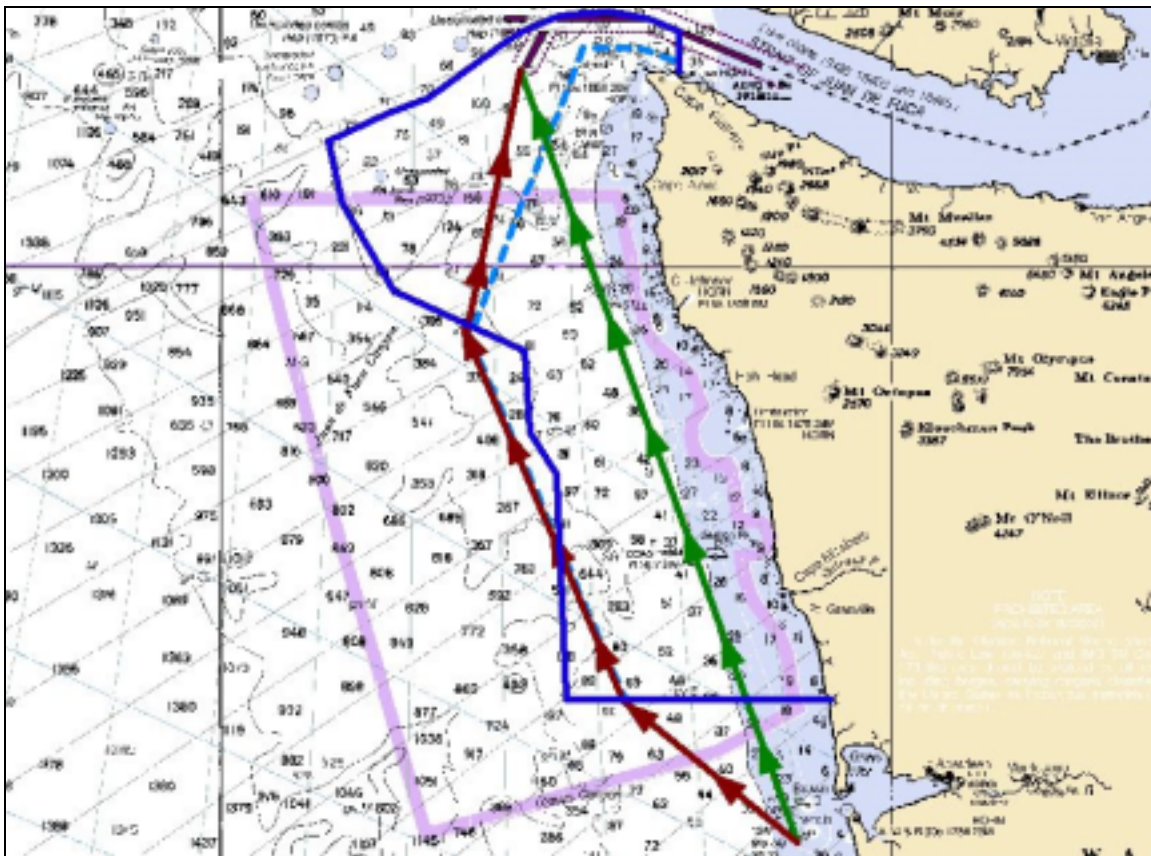


Figure 3: Proposed TSS and ATBA modifications; direct route from Buoy "GH" to new TSS entrance (98 nm); and ATBA route (108 nm).

ARRIVAL DATE	DEPARTURE DATE	VESSEL NAME	FULL/PARTIAL SHIPMENT	CARGO TYPE
WEYERHAEUSER TERMINAL -- Aberdeen				
1/6/99	1/8/99	GLORY ISLAND	P	LOGS
1/11/99	1/12/99	*BLUE GEMINI	P	LOGS

1/15/99	1/20/99	ARIES HARMONY	F	LOGS
2/3/99	2/6/99	*TRICHORD SUCCESS	F	LOGS
2/24/99	2/25/99	RUBIN STAR	P	LOGS
2/13/99	2/15/99	KEN ZUI	F	LOGS
3/17/99	3/19/99	BRIGHT PHEONIX	F	LOGS
3/10/99	3/16/99	PAC QUEEN	F	LOGS
3/22/99	3/26/99	*ORIENTAL HARMONY	P	LOGS
3/5/99	3/9/99	*BLUE GEMINI	P	LOGS
4/4/99	4/8/99	KEN ZUI	P	LOGS
4/26/99	5/1/99	BRIGHT PHOENIX	P	LOGS
4/20/99	4/23/99	GLORIOUS SUCCESS	P	LOGS
4/26/99	4/27/99	BLUE NOVA	P	LOGS
5/16/99	5/20/99	GRETKE OLDENFORFF	F	LOGS
6/1/99	6/4/99	TRICHORD SUCCESS	P	LOGS
6/11/99	6/17/99	GLORIOUS SUCCESS	F	LOGS
6/18/99	6/26/99	KEN SHIN	P	LOGS
6/14/99	6/15/99	*BLUE NOVA	P	LOGS
7/12/99	7/17/99	BRIGHT PHOENIX	F	LOGS
7/27/99	7/30/99	GLORIOUS SUCCESS	P	LOGS
8/26/99	8/29/99	LAUT JAYA	P	LOGS
7/28/99	8/5/99	KEN SHIN	F	LOGS
8/3/99	8/4/99	BLUE NOVA	P	LOGS
8/28/99	8/30/99	BRIGHT PHOENIX	P	LOGS
9/13/99	9/14/99	KEN UN	P	LOGS
9/16/99	9/21/99	GLORIOUS SUCCESS	F	LOGS
9/18/99	9/19/99	BLUE NOVA	P	LOGS
9/20/99	9/25/99	KEN ANN MARU	F	LOGS
10/14/99	10/17/99	OCEAN CAMILLIA	F	LOGS
10/14/99	10/17/99	SEVEN OCEAN	P	LOGS
11/5/99	11/9/99	GLOBAL ARROW	P	LOGS
11/6/99	11/13/99	GLORIOUS SUCCESS	P	LOGS
11/17/99	11/25/99	ORANGE SUCCESS	P	LOGS
12/5/99	12/6/99	BLUE GEMINI	P	LOGS
12/7/99	12/10/99	OCEAN PALM	F	LOGS
QUIGGS/CITIFOR TERMINAL				
Nothing reported				
PORT OF GRAYS HARBOR TERMINAL				
1/12/99	1/13/99	*BLUE GEMINI	P	LOGS
1/28/99	1/29/99	LAUREL ISLAND	P	LOGS
1/22/99	1/24/99	STAR TOSCANA	P	LUMBER/PULP
2/7/99	2/8/99	*TRICHORD SUCCESS		EMERGENCY

2/24/99	2/25/99	KITE ARROW	P	PULP
2/25/99	2/26/99	STAR DRIVANGER	P	LUMBER/PULP
3/4/99	3/5/99	*BLUE GEMINI	P	LOGS
3/8/99	3/9/99	GREEN WAVE	P	CONTAINERS
3/20/99	3/21/99	TOKI ARROW	P	PULP
3/26/99	3/30/99	*ORIENTAL HARMONY	P	LOGS
3/30/99	3/31/99	STAR TRONDANGER	P	LUMBER/PULP
4/1/99	4/3/99	CENTURY STAR	P	LOGS
4/21/99	4/21/99	STAR EVIVA	P	LUMBER/PULP
5/20/99	5/20/99	GLOBAL NEXTRAG	P	LOGS
5/12/99	5/12/99	GALAXY	F	PASSENGERS
5/22/99	5/4/99	STAR TUVA	P	LUMBER/PULP
5/23/99	5/24/99	GANNET ARROW	P	PULP
5/27/99	5/28/99	WEAVER ARROW	P	PULP/STEEL/CONTAINERS
6/11/99	6/13/99	TANAGRA	P	LOGS
6/14/99	6/14/99	*BLUE NOVA	P	LOGS
6/22/99	6/23/99	STAR LEIKANGER	P	LUMBER/PULP
6/23/99	6/24/99	WESTWOOD CLEO	P	LUMBER
6/30/99	6/30/99	ISLAND ENTERPRISE		FISH
7/15/99	7/16/99	APALIS ARROW	P	PULP
7/25/99	7/25/99	STAR DERBY	P	LUMBER/PULP
8/15/99	8/16/99	STAR HERDLA	P	LUMBER/PULP
9/21/99	9/23/99	STAR DERBY	P	LUMBER/PULP
10/27/99	10/29/99	STAR HARMONIA	P	LUMBER/PULP
11/3/99	11/5/99	STAR HARMONIA	P	PULP
11/5/99	11/17/99	STAR LANGANGER	P	LUMBER/PULP
11/9/99	11/10/99	STAR HARMONIA	P	LUMBER/PULP
11/19/99	11/19/99	STAR DIEPPE	P	PULP
11/27/99	11/27/99	SISKIN ARROW	P	PULP
11/29/99	12/1/99	STAR DERBY	P	PULP/STEEL
11/27/99	11/28/99	SAGA TIDE	P	LUMBER/PULP
11/29/99	12/1/99	STAR DERBY	P	LUMBER/PULP
12/11/99	12/14/99	STAR DROTTANGER	P	LUMBER/PULP
12/27/99	12/28/99	STAR GRIP	P	PULP
RAYONIER TERMINAL				
Nothing reported				

Table 3: Vessels arriving and departing from the Chehalis River - 1999;
Inter Harbor transfers denoted by a * before the vessel name;
Categorized by terminal facility